

Abstract

Title: Universal Simplified Protocol (USP) for ultrasound assessment of non-acute haemophilic arthropathy

Department:

Department of Radiology,
Christian Medical College & Hospital,
Vellore – 632004.

Name of the candidate: Dr. S. Monica

Degree and subject: Post diploma MD final year and Radiodiagnosis

Name of the guide:

Dr. Shyamkumar N Keshava
Professor,
Department of Radiology,
Christian Medical College & Hospital,
Vellore – 632004.

Objective:

The purpose of this study was to evaluate a universal simplified protocol (USP) for ultrasound in non-acute haemophilic arthropathy to provide adequate details with lesser duration of examination

Methods:

This was a prospective study approved by the Institutional Review Board with financial grant for the same. Ultrasound and MRI imaging of affected haemophilic

arthropathy joint were performed using different ultrasound protocols namely TV-US, USP and HEAD and correlated with MRI findings, which were used as the reference standard. The soft tissue and osteochondral abnormalities like synovial hypertrophy, effusion, erosion and cartilage loss were analysed for 20 joints (11 knee and 9 ankle). Using Kappa significance agreement, the reliability and diagnostic efficiency were analysed for USP by comparing it with other ultrasound protocols and MRI.

Results:

There was very good correlation for synovial hypertrophy in TV-US and USP (Kappa significance >0.9) but moderate correlation (Kappa significance <0.5) in HEAD protocol. For effusion there was moderate correlation in TV-US and USP but a very poor correlation (Kappa significance 0.17) in HEAD protocol. There was an excellent correlation (Kappa significance 1) for erosion in TV-US and USP with MRI but moderate correlation (Kappa significance 0.6) in HEAD protocol. For cartilage loss there was similar correlation in all the ultrasound protocols with minimal decrease in Kappa significance for HEAD protocol. Inter-observer agreement was also good for USP.

Conclusion:

Universal Simplified Protocol (USP) was found to be comparable with the TV-US protocol and MRI and superior to HEAD protocol in the evaluation of the haemophilic arthropathy joints with lesser duration and less documentation of images. USP can hence be used as an alternative but easier analysing protocol for assessing the affected joints without fear of losing information.

Keywords: haemophilia, arthropathy, USP, synovial hypertrophy, erosion, effusion